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Ref: 8EPR-N

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J. Signe Snortland
Bureau of Reclamation
Dakotas Area Office
P.O. Box 1017
Bismarck, North Dakota 58502

Re: EPA Comments on the Draft Environmental Impact Statement Arkansas Valley Conduit and Long-Term Excess Capacity Master Contract, Fryingpan-Arkansas Project
CEQ # 20120290

Dear Ms. Snortland:

The U.S. Environmental Protection Agency Region 8 (EPA) has reviewed the U.S. Bureau of Reclamation's (BOR) Draft Environmental Impact Statement (DEIS) for the Arkansas Valley Conduit and Long-Term Excess Capacity Master Contract, Fryingpan-Arkansas (Fry-Ark) project. Our review was conducted in accordance with EPA's responsibilities under section 102 of the National Environmental Policy Act (NEPA), 42 U.S.C. § 4332(2)(c), and Section 309 of the Clean Air Act, 42 U.S.C. § 7609. Section 309 of the Clean Air Act directs EPA to review and comment in writing on the environmental impacts of any major federal agency action.

The DEIS discusses potential environmental consequences associated with the construction and operation of a proposed Arkansas Valley Conduit (AVC), the conveyance contract for the Pueblo Dam north-south outlet works interconnect (Interconnect), and a long-term excess capacity master contract (Master Contract). Although these three proposals are independent actions, the BOR analyzed the environmental effects and provided a range of alternatives for these three federal actions within the same DEIS due to the overlap in area, timing and participants. A Preferred Alternative was not identified in the DEIS, therefore each alternative action was considered when evaluating and rating the environmental impact and the adequacy of the NEPA document.

**Background**

There are three proposed federal actions evaluated in the DEIS: 1) AVC construction, operation, and repayment; 2) a conveyance contract for use of the Interconnect, which would be constructed as part of AVC; and 3) entering into a Master Contract with the Southeastern Colorado Water Conservancy District (Southeastern) to store water in Pueblo Reservoir and other Fry-Ark reservoirs. Each proposed action has a specific purpose and need.

The AVC is a congressionally authorized Fry-Ark feature that would provide a bulk water supply pipeline to meet existing and future municipal and industrial water demands in the Lower Arkansas River Basin. The water supply is also needed to supplement or replace existing poor quality drinking water. Forty water providers would participate in AVC, with all but one currently relying primarily on groundwater sources. The Interconnect consists of a short section of pipeline necessary to convey water between the future north outlet works (associated with the Southern Delivery System) and existing south outlet works at Pueblo Reservoir during short-term maintenance and emergency outages. Finally, the proposed 40-year Master Contract between the BOR and Southeastern provides for excess capacity up to 29,938 acre-feet for storing non-Fry-Ark water in Pueblo Reservoir and other Fry-Ark reservoirs when excess space is not filled with Fry-Ark water to meet existing and future water demands and provide drought protection.

Future water demand through the year 2070 is estimated to be 12,569 acre-feet based on projected population growth rates applied to each AVC participant. AVC would deliver about 10,250 acre-feet per year of Fry-Ark allocations to AVC participants to meet 82 percent of 2070 water demands. The DEIS states that AVC would deliver AVC participant Fry-Ark allocations, including not previously allocated nonirrigation water and reusable return flows, plus a portion of existing and future non Fry-Ark water supplies that are required to meet future demand (p.1-19).

The DEIS evaluates a No Action Alternative and six action alternatives. The DEIS on page 2-7 provides the following summary in Table 2-2:

**No Action Alternative** – AVC participants would regionalize or continue current operations. Water treatment would meet primary drinking water standards (including radionuclides), but not necessarily secondary drinking water standards. There would be no Master Contract.

**Comanche South Alternative** – Water would be diverted from existing Pueblo Reservoir south outlet works. AVC would be constructed south of Pueblo and then south of the Arkansas River to Lamar. A new water treatment plant would be built at Pueblo Reservoir to filter water.

**Pueblo Dam South Alternative** Water would be diverted from the existing Pueblo Reservoir south outlet works. AVC would be constructed along the Bessemer Ditch through Pueblo, then south of the Arkansas River and east to Lamar. A new water treatment plant would be built near South Road and 21st Street in St. Charles Mesa to filter water.

**Joint Use Pipeline (JUP) North Alternative** – Water would be diverted from the existing Pueblo Reservoir JUP. AVC would be constructed north of the Arkansas River through Pueblo to Lamar. New water facilities would be built at the existing Whitlock Water Treatment Plant to filter water. There would be no Master Contract.

**Pueblo Dam North Alternative** - Water would be diverted from the existing Pueblo Reservoir south outlet works. AVC would be constructed north of the Arkansas River through Pueblo to Lamar. A new water treatment plant would be built at Pueblo Reservoir to filter water.

**River South Alternative** – Water would be diverted from the Arkansas River upstream from Fountain Creek. AVC would be constructed south of the Arkansas River to Rocky Ford and east to Lamar. A new water treatment plant would be built near the existing St. Charles Mesa Water District facilities to filter and disinfect water.

**Master Contract Only Alternative** – AVC would not be built. AVC participants would operate as described in the No Action Alternative.

**EPA Comments**

The EPA appreciates having had the opportunity to work closely with the BOR as a Cooperating Agency during the development of the DEIS. This collaboration has improved the EPA's understanding of the analytical approach, and ultimately produced an enhanced characterization of impacts in the DEIS technical documents. The EPA remains committed to working with the BOR to resolve any remaining issues. After review of the DEIS, the EPA has the following principal concerns: 1) evaluation of potential impacts to impaired waterbodies and other aquatic resources; 2) general presentation of effects analyses; and 3) lack of detail regarding mitigation measures and monitoring. We have provided recommendations regarding our concerns for your consideration.

**Water Resources**

*Water Quality Impairments and TMDLs*

The DEIS did not fully analyze the project's effects on several constituents associated with CWA Section 303(d) listed waterbodies and total maximum daily loads (TMDLs) in the Upper Arkansas River Basin. Specifically impacts on concentrations of pH, dissolved oxygen (DO), copper, arsenic, cadmium, mercury and zinc were not analyzed for some of the Section 303(d)-listed water body segments. The water quality effects analysis, as illustrated in Table 4-16 of the DEIS, concludes that direct and indirect effects to "Upper Basin TMDL Allocations" will be negligible; however, the DEIS acknowledges that two of the three TMDLs were not examined because the flow gages used to calculate the TMDLs were outside of the modeled area. The river segments that were not assessed include the TMDLs for cadmium and zinc for the Arkansas River between Lake Fork Creek and Lake Creek, and the TMDL for copper for Lake Creek.

Additionally, although the DEIS acknowledges that nutrients are of concern, ammonia and nitrate/nitrite were the only "regulated nutrients" examined. Other principal nutrient forms were not included in the analysis, including total nitrogen (TN) and total phosphorous (TP). Phosphorous is the limiting nutrient in most Colorado waterbodies, which argues for including an examination of the project's effects on phosphorus concentrations. Furthermore, surrogate measures for nutrient impairment (*i.e.*, pH and DO) were not examined, although there are waterbodies impaired for (and/or potentially affected by) these constituents within the study area.

*Recommendations*

The EPA recommends that the contaminants of concerns outlined above, including surrogate measures (*i.e.* pH and DO), be examined as part of the EIS impacts analysis to ensure that streamflow changes associated with the project will not exacerbate impaired conditions. For the TMDL analysis on streams without a gage within the modeled area, the EPA suggests that the BOR use analogous/surrogate flow information from a similar sub-basin or stream reach within the Upper Arkansas Basin modeled study area, if such information is available, to calculate concentrations for the various TMDL contaminants. The calculated concentrations could then be compared with the current TMDLs to determine if they exceed the various allocations. If more recent data are available for contaminants in data limited stream segments, we recommend that this information be included in the analysis.

*Selenium Effects*

The DEIS states that all alternatives compared to the No Action would have negligible to minor adverse effects on water quality, with occasional moderate increases in selenium in dry years near the Avondale gage. It is unclear what effects the project may have on the selenium-impaired section of the Arkansas River between Fountain Creek and the Kansas state line, because TMDLs have not yet been established and approved. Based on these modeling results presented in Appendix D.4 and projected decreased flow conditions compared to existing conditions, it raises concern that the modeled change in streamflow could increase constituent concentrations and exacerbate impairment on this section of the river.

Additionally, the DEIS presents apparently contradictory conclusions regarding selenium loading in Appendix F.1., page F.1-4, which states, "Surface and sub-surface water from lawn watering, irrigation, and precipitation contacts and dissolves selenium-containing rock and soils in the study area. Ortiz et al. (1998) found that over 90 percent of the selenium measured in Arkansas River downstream from Pueblo Reservoir was in the dissolved phase." Conversely, the section goes on to state that selenium loading "results from natural sources and is not exacerbated by land use or other reversible, anthropogenic factors (Health Department 2012a)."

*Recommendations*

The EPA recommends including an assessment of project effects for selenium in the Environmental Consequences EIS chapter so that alternatives are compared to existing conditions based on information presented in Appendix D.4. If any TMDLs for selenium are approved in the project analysis area prior to publishing the FEIS, please provide an assessment on the project's ability to meet the TMDL as you have done in the DEIS using the mass balance model and Daily Model streamflow results. The EPA also recommends clarification in the FEIS on whether land-use practices could be altered by AVC alternatives, and the extent to which such alterations could affect selenium concentrations or other water quality parameters in the study area.

*Aquatic Resources*

In order to calculate potential streamflow impacts in the headwater region of the Colorado River Basin on the West Slope from changes in transmountain imports, data from mainstem gages on rivers and creeks downstream from diversions were utilized in the DEIS analysis. Since many of the smaller streams on the Western Slope are not currently gaged, the streamflow changes (gain/loss) for the ungaged reaches located below the diversions but above the mainstem gages were pro-rated based upon distance from the gages. By pro-rating the flow reduction by distance from the gage, the DEIS attributes the diverted flows to all of the tributaries instead of attributing the reduced flow to the headwater stream from which it is diverted. The DEIS concludes that "Effects in tributary streams upstream from these gages would be approximately the same percentage as those calculated at the gages" (p. D.5-2). There is not a detailed enough resource description of these stream reaches within the DEIS. Depending on the size of the headwater streams, even minor flow reductions have the potential to impact wetland and riparian areas, water quality, and/or aquatic life. Therefore, because the information available in the DEIS is limited for the streamreaches between the diversions and mainstem gages, it is difficult to assess if effects will be negligible even if flow reductions are minimal.

*Recommendations*

The EPA recommends that the FEIS include additional information regarding aquatic life and wetland characterization (e.g., is the streambed in bedrock or alluvial deposit) for the stream reaches in question to better determine what level of impact may occur (e.g., minor, moderate or major) as a result of a particular diversion. By also including available operational data from the diversion points in the FEIS, this will assist in presenting a more precise description of the impact on the flow of the headwater streams, particularly during low flow periods when additional diversions may increase frequency or duration of critical low or no flow conditions. The EPA recommends the FEIS provide a range of potential flow reductions occurring at (immediately below) the diversions based on operational scenarios. In this way, the FEIS will better describe minimum and maximum impacts to these stream stretches that pro-rating will likely not capture. This information may help address potential concerns that diversions and likely operating scenarios could draw down headwater streams to an unhealthy level, even when flow reductions are minimal.

**General Presentation of Effects Analyses**

When evaluating effects of project alternatives, the DEIS did not present results against consistent baselines. In most cases, the No Action Alternative was evaluated against existing conditions, and the Action Alternatives were evaluated against the No Action Alternative. However, in some instances, action alternatives were compared to existing conditions. The rationale provided in the DEIS stated that this type of comparison was necessary "when relevant to quantifying or characterizing the magnitude of effects," and gave the example of an agency's request to evaluate effects of alternatives on aquatic life to existing conditions (DEIS p. 4-2).

Comparison of the action alternatives to existing conditions enables the public and decision-makers to clearly understand impacts (*i.e.* intensity of effects) of each of the alternatives as they relate to the current baseline. It can also be useful, although often less certain, to compare alternatives against a no action baseline that includes reasonably foreseeable future conditions. The EPA continues to recommend that the FEIS compare and present impacts to resources, such as water quality, against the existing conditions baseline using a consistent method to measure project impacts on these critical resources for all alternatives. It may be useful to include both baselines when illustrating the intensity of effects for the resource analyses.

**Mitigation Measures for Aquatic Life and Other Resources**

The EPA acknowledges that this is a complex project involving various water sources associated with meeting future water needs. There is some uncertainty related to water availability and associated reservoir operations, with climate change further complicating the issue. The DEIS identifies potential moderate adverse impacts to aquatic life in both Pueblo and Holbrook Reservoirs related to certain alternatives. The moderate effect intensity is described, in part, as effects on fish and benthic macroinvertebrates abundance, habitat, or the natural processes sustaining them would be detectable and readily apparent and sometimes out of the historical range of natural variability. For benthic macroinvertebrates, there would be changes in the number of species (DEIS p. 4-86). Although the DEIS states that the Environmental Review Team intends to monitor and coordinate with the Colorado Parks and Wildlife (CPW) to determine the level of mitigation that is warranted, these details are not included in the DEIS.

Additionally, moderate effects on surface water hydrology (defined as a measureable change to streamflow or reservoir contents greater than 10 percent) are projected in some capacity for all of the alternatives (see DEIS pp. 4-15, 4-16). The DEIS explains that the amount of water/storage to be reserved annually will be evaluated during development of a Fish and Wildlife Mitigation Plan for maintaining flows in the Arkansas River downstream from Pueblo Reservoir to meet water quality and aquatic life goals.

*Mitigation Recommendations*

We recommend mitigation commitments, including identification of environmental thresholds that would trigger management actions to prevent or reduce impacts to aquatic life, be discussed in the Final EIS. We suggest including more detail to further explain the current proposal that mitigation at Holbrook Reservoir will be limited to restocking aquatic species. Mitigation options such as habitat improvement in the form of increased cover and/or outlet design to minimize fish loss downstream may deserve further consideration based on the operations of the reservoir. It would be helpful if the Fish and Wildlife Mitigations Plans (to be developed between the Draft and Final EIS, see DEIS p. 5-14) are included in the Final EIS, and that plans and specifications for mitigation activities resulting from CPW coordination are also prepared and included within the Record of Decision (ROD).

**Other Considerations**

- There is currently a provisional Section 303(d) listing for aquatic life associated with the Fryingpan River. Affected segments may be subject to AVC diversions. The EPA recommends including any up-to-date information on this provisional listing in the Final EIS. If the impairment is formally listed, please include an impacts analysis and any associated mitigation/monitoring measures proposed to address potential project impacts in the Final EIS.

- The DEIS states in Chapter 3 Affected Environment that several natural and anthropogenic resources, including air quality and hazardous materials, were not addressed in detail in the DEIS because the effects of the project alternatives were considered minimal. The DEIS references consultant reports that were the basis of the decision not to analyze these resources; however, these reports are not readily available. The EPA recommends including these reports in the appendices to the FEIS, or providing a website link, so that agencies and the general public can easily access them.

- Finally, there were no aerial maps showing the exact location of the pipeline for the alternatives that included the Arkansas Valley Conduit. Aerial maps would be a helpful reference, particularly for those alternatives where the pipe alignment traversed the more populated areas in Pueblo.

**Climate Change**

In this DEIS, the BOR provided a robust project analysis of climate change effects. The DEIS describes climate change and general regional effects on climate and hydrology, and includes a quantitative analysis of how climate change could affect AVC water supply yields and future water demands. A qualitative description of climate change effects is also included for each resource. The EPA has recommended that decisionmakers involved in other water supply projects review this DEIS when considering approaches to incorporating climate change analyses in NEPA documents.

**The EPA's Rating**

Consistent with Section 309 of the CAA, it is the EPA's responsibility to provide an independent review and evaluation of the potential environmental impacts of this project. Based on the procedures the EPA uses to evaluate the adequacy of the information and the potential environmental impacts of the proposed action, the EPA is rating this DEIS as Environmental Concerns – Insufficient Information (EC-2). The "EC" rating indicates that the EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. The "2" rating indicates that the EPA has identified additional information, data, analyses, or discussion to fully assess and mitigate all potential impacts that we recommend for inclusion in the FEIS. Because a preferred alternative was not identified in the DEIS, we are rating the DEIS based on the six action alternatives (we do not rate the no action alternative). A full description of EPA's rating system is included as an enclosure.

We appreciate the opportunity to participate in the review of this project, and we're committed to working with you in the coming months. If we may provide further explanation of our comments during this stage of your planning process, please contact me at 303-312-6925, or your staff may contact Melanie Wasco, Lead NEPA Reviewer, at 303-312-6540.

Sincerely,

for Suzanne J. Bohan
Director, NEPA Compliance and Review Program
Office of Ecosystems Protection and Remediation

Enclosure: Ratings Criteria